Watershed Protection: A Statewide Approach
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Appendix B: Management Cycle for the State of Nebraska

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Management activities within Nebraska's thirteen delineated basins will be coordinated around a five-year cycle. A series of steps are executive for each basin over the cycle, ending with the promulgation and implementation of a management plan. These steps are illustrated in Figure 1 and described below in more detail.

Step 1. Draft Strategic Monitoring Plan

A strategic plan will be drafted that specifies monitoring to support basinwide assessment. Details shall include monitoring objectives, station locations, parameter coverage, sampling frequency, and monitoring plan rationale.

Step 2. Initial Public Outreach

As resources allow, NDEQ will hold public meetings at appropriate sites within the basin to acquaint stakeholders with the overall framework and help identify management concerns specific to that basin. It is anticipated that the format of the meetings will generally follow that used for Nebraska Wetlands Conservation Plans, which includes Open House sessions, large group presentation, and small group discussions. Relevant portions of the NDEQ strategic monitoring plan will be presented with an explanation of how the resulting data will be used for assessing water quality and prioritizing management needs. This initial outreach will provide stakeholders with opportunities early in the basin planning process to submit relevant information, identify potential gaps in the monitoring strategy, participate in data collection where appropriate, or provide other feedback.

Step 3. Implement Strategic Monitoring Plan

The strategic monitoring plan for basinwide assessment will be implemented following any modification resulting from feedback received during initial outreach activities.

Step 4. Canvas for Information

NDEQ will make direct contact with key agencies and other entities to obtain additional relevant information for use in basin planning. In particular, data will be sought for characterizing the basin (e.g., hydrology, land-use, population demographics, economic base, etc.) and for evaluating water quality. Stakeholder information will also be used where appropriate in the prioritization and management strategy development process.

Step 5. Analyze Information

Initial analyses of basinwide monitoring data and supplemental stakeholder information will focus on determining use support status, identifying problems and areas of special ecological value, and assessing information gaps. Limitations in data coverage should be specified so that initial findings can be appropriately qualified. Some quantification of problems may occur to

clarify causes and sources, estimate loading, and quantify assimilative capacity. Further analysis and more detailed quantification of problems will continue for waters that are prioritized in the next step. Known gaps in field data will be addressed during updates of the strategic monitoring plan.

Step 6. Prioritize Problems and Critical Issues

NDEQ will apply a standardized set of criteria and procedures to prioritize waterbodies in need of management or additional assessment so that resources can be targeted to address the concerns in an efficient and effective manner.

Step 7. Continue Public Outreach

NDEQ will present potential stakeholders with a summary of the initial water quality assessments and recommended management priorities. Areas in need of further problem quantification will be identified. NDEQ will attempt to match stakeholders to corresponding priority waterbodies. In some cases, "Focus Groups" may be formed among stakeholders to help clarify matters. Stakeholder and Focus Groups will form the basis for stakeholder involvement in the evaluation of management options and development of basin management plans.

Step 8. Implement Updates to Strategic Monitoring Plan

Based on the results of initial assessment and prioritization, along with feedback from public outreach activities, NDEQ will update and implement its strategic monitoring plan to gather data for further problem quantification. This will include data for model development or other tools necessary to evaluate management options.

Step 9. Problem Quantification

Additional problem quantification will be performed where required to establish the magnitude of a problem, determine assimilative capacity, calculate loads for contributing sources of pollutants of concern, or otherwise further assess the problem such that sufficient information is available for management strategy development. This includes field calibration of models and development of total maximum daily loads (TMDLs).

Step 10. Develop Management Strategies

NDEQ will work with other stakeholders to arrive at a consensus on management goals, such as specific waterbody segments to be restored or protected. This will include loading reductions that should be achieved, or the amount of habitat that needs restoring, etc. Input will also be solicited from stakeholders to establish feasible combinations of point and nonpoint source control measures and management actions to achieve goals. Management options will be evaluated via predictive modeling, or by other methods where appropriate, for their relative effectiveness at achieving environmental objectives. Regulatory constraints and procedures will be considered, and stakeholder consensus will be sought where voluntary efforts are needed to meet environmental objectives. Selected management strategies will outline mechanisms for

implementing controls, time frames, anticipated costs, sources of funding, monitoring strategies, compliance tracking and enforcement methods, etc.

Step 11. Prepare Draft Basin Plan

NDEQ will prepare a draft basin plan which documents the results of the basin planning process including assessment, priorities, goals, selected management alternatives, and the implementation strategy.

Step 12. Agency and Public Review

An internal review of the draft basin plan will be performed to ensure that it is ready for public distribution. Upon agency approval, the plan will be made available for public review and comment. Outreach will be provided to explain provisions and implications of the plan.

Step 13. Complete Final Basin Plan

Modifications will be made to the plan, as necessary, based on comments and input received through the review process, to complete a final basin plan.

Step 14. Basin Plan Implementation

Each cycle ends with a basin plan implementation period. The implementation strategy outlined in the plan will be followed, taking such steps as necessary to implement pollutant source controls, best management practices, monitoring programs, enforcement methods, etc. Activities occurring during this period will include public notice and issuance of NPDES individual and basin general permits, distribution of state revolving fund (SRF) loans to prioritized entities, and allocation of 319 funds to prioritized NPS problem areas. In addition, implementation will include an outreach component to communicate the goals and selected management strategies of the final plan. Outreach will also be used to educate stakeholders on implementation schedules, milestones, and where regulatory and voluntary efforts are required to meet environmental objectives.

The final basin plan contains recommendations for follow-up basinwide assessment to measure the degree of success from plan implementation and to evaluate areas that were not assessed during the previous cycle. After a specified period of time for plan implementation, NDEQ will implement the updated strategic monitoring plan and the basin management cycle will be repeated.

The basin management cycle will not be initiated in all basins at the same time for practical reasons. Activities within the thirteen basins will be sequenced so that steps are performed incrementally across the state. This helps to balance program workloads. Focusing on the same steps at one time in a small segment of the state creates a more efficient and effective operating framework.

Table 1 shows the sequence and scheduling of steps for Nebraska's thirteen river basins. The order in which river basins will be addressed is shown along the left hand column of the table. Corresponding schedules for performance of each step of the basin management cycle are shown to the right of the column of basins. Two lines of symbols are used for each basin to better depict simultaneous activities (Note: symbols are defined in the legend at the bottom of the table). The table shows how steps are phased in across the state over the first five-year cycle from 1994 to 1998. Basinwide management activities will be ongoing in all basins across the state by 1998, and basin management plans will be implemented for all basins by the end of 2001.

Specific scheduling patterns have been incorporated within the basin cycle. For instance, the vast majority of field monitoring activities for NDEQ's Water Quality Division are performed between May and November for scientific reasons. Therefore, strategic monitoring plans will need to be finalized by the end of April each year so that actual sample collection can begin in May.

Data analysis (A) and problem quantification (Q) are shown in the table under the months of November through February following the first year of monitoring and information collection. However, this does not mean that analysis and quantification are restricted to that period. Rather, this is the period where data are screened and assessed for watershed prioritization purposes. It is recognized that analysis and quantification for purposes of evaluating management options will continue on in some prioritized watersheds up until development of management strategies and written plans. This is illustrated in the table by the series of months with a *Q* following the *Mq* period.

Finally, it should be noted that the length of time scheduled for follow-up problem quantification and management strategy development differs across basins that are grouped in the same year of the cycle. The times have been staggered so that only one basin plan is being drafted at a time. For example, plan drafting will occur in July-August of 1996 for the Lower Platte whereas the basin plan for the Nemaha will be written in November-December, 1996. This same type of pattern is repeated for each year of the basin cycle.